

Remarks**Formality Corrections**

In regard to your suggested corrections we have amended the specification to conform to your suggestions where appropriate. Please find the amendments above.

35 USC 112 Objections:

Please note that claims 2,3, 16 and 17 have been deleted. New independent claim 18 includes the limitations found in former claims 1, 8,10, and 17. The "actuating means" is now clearly defined as is the relationship of the "bit assembly" and "bit extension". The drawings define these components as well.

35 USC 102 Rejection:

The examiner relies on US patent ~~6,332,384~~ issued to Paul Cluthe on Dec. 25, 2001. Please find enclosed an affidavit of prior invention under 37 CFR 1.131 in which we claim a prior invention date and submit that Cluthe cannot be properly cited against this application. Therefore the 35 USC 102 rejections have been overcome.

Explanation of the Amendments

The examiner has also cited Lemieux 3,750,729 and Sato 6,205,893 and Orlitzky 4,762,036 and Koehler 5,325,745 as pertinent prior art and we have drafted new claims with this prior art in mind.

The Examiner will note that the Claims 1 through 17 which are currently pending with this application have been deleted and replaced with Claims 18 through 38.

The Examiner will note in particular that we have amended claim 18 to include the limitations found in previously submitted Claims 1, 8, 10 and 17. We believe that the structural and/or functional limitation that we have added in paragraph (f) of Claim 18 in particular is patentable subject matter as we discuss here below.

The Examiner will further note that Claims 19,20, and 21 are new claims which expand upon the limitation found in paragraph (f) of Claim 18. These claims are supported by the previous claim 17, by the disclosure page 20 the paragraph starting on line 18, and page 21

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the paragraph starting on line 3 as well as Figures depicting the "bit extension 54".

Most of the balance of the dependant claims carry over from the previously submitted claims and have been renumbered accordingly.

We have further included independent Claim 32.

We now believe that independent Claims 16 and 32 contains patentable subject matter as we discuss and explain below.

Patentability of Present Invention over the Applied Art

The Examiner has cited against our application US Patents: Lemieux 3,750,729 and Sato 6,205,893 and Orlitzky 4,762,036 and Koehler 5,325,745

In addition, the Examiner has brought to our attention US Patent 5,337,637

We have carefully reviewed the prior art and would like to point out the following major differences between the prior art and the present invention:

1. The prior art uses round tool bits rather than hexagonally shanked tool bits as is the case in the present invention. The use of round bits verses hexagonally shanked bits simplifies greatly the problem encountered when moving the tool bits from a retracted position within the handle to the extended position into a chuck. The round tools bits are insensitive to rotational movement of the tool bit itself when entering the chuck since the registration system between the bits and the chuck is completely different in Lemieux for example than it is in the present invention. Lemieux utilizes keys noted as 85 in drawing Figure number 9 in the patent to register with enter slots 87 found within the tool chuck shown in Figure 8. In our case the hexagonally shanked tools bits must register and align perfectly with chuck receiving channel 89 as best shown in Figures 9 and Figure 6 of our drawings, otherwise the tool bit will not slide through bit chuck 80 into the extended position.

Therefore, unlike Lemieux and the other cited patents in order to use standard hexagonal shanked tool bits as is done with our device, it is essential and critical that the tools bits align and register perfectly with the hexagonal receiving channel of bit chuck 80 in order to be able to move the tool bits from the retracted to the extended position. This issue becomes critical because of the odd shaped ends or tips that the tools bits have. For example Philips and Robertson create deflection or twisting forces of these tool bits as they are urged from the

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retracted to the extended position on the interior surface of cone 34. Twisting cannot be tolerated, otherwise the bit chuck will not register and enter properly through chuck receiving channel shown as 89 of bit chuck 80. This was a very difficult problem to solve. In order to overcome this problem, the inventor has developed a planer bit extension piece 54 as opposed to a round or a symmetrical bit extension piece which allows the bit to deflect in the radial direction as it moves along the inner cone from the retracted to the extended position, however prohibits and provides resistance to lateral and/or transverse movement of the bit as it moves from the retracted to the extended position. It has only been through the use of these flat or planer bit extension pieces that we have been able to make this tool reliably usable.

In the originally submitted claims, we claimed this feature in Claim 17. This is a significant unobvious variation of the existing devices patented to date and we believe that it is this innovation that has allowed this screw driver to become technically feasible and a commercially viable product. Many attempts by the inventor to use round bit extension pieces failed. It was not until the inventor discovered that a flat or planer bit extension portion could ensure that the registration between the tool bit and the bit chuck is maintained did this product become viable.

You will see that we have amended our Claim 1 to include the limitations found in the as submitted Claim 1, 8, 9, 10 as well as 17 and therefore, we believe that these claims contain patentable subject matter as we have provided one structural and/or functional difference between the claimed invention and the applied art of the Examiner which is required to overcome an obviousness or anticipation rejection.

2. I would like to address Koehler US 5,325,745 which describes a "leaf spring" which is not an extension of the bit but rather an attachment fastening roughly midway along the length of the bit. Koehler indicates in column 3 line 54 to 57: "The effect of this leaf spring 70 is in particular, the moving of the bit 12 out of alignment with the central column".

This is the exact opposite function of our bit extension which as we claim is for "maintaining alignment of said tool bits with said bit chuck" (Claim 18 part d). Therefore Koehler teaches away from our invention.

3. Finally also not found in the prior art, the present invention includes a conical section converging into a hexagonal socket or bit chuck which we have designated as chuck receiving channel 89 of bit chuck 80. This is another structural and/or functional difference between the claimed invention and the applied art.

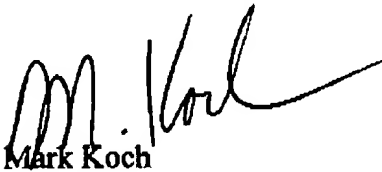
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Therefore we submit that Claims 18 and 32 now contain patentable subject matter and therefore, the claims depending there from would contain patentable subject matter.

We now submit that the amended claims overcome the objections raised by the Examiner that this application is now in a condition of allowance and we look forward to receiving your reply.

I respectfully request that the objections and rejections to this application be removed and that the amendments to the specification now put this application in a condition for examination.

Respectfully submitted,



Mark Koch

(44,448)

MAK:pf

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VERSION WITH MARKINGS TO SHOW CHANGES

Field of the Invention

The paragraph on page 1 beginning at line 4 has been amended as follow:

This invention relates to hand held implements having interchangeable objects which are art captured within the implement and selected object extendable from the implement for use.

In the Specification:

The paragraph on page 7 beginning at line 16 has been amended as follows:

Figure 5 is ~~an end~~ a first end view of the multi-bit driver shown in Figure 4.

The paragraph on page 7 beginning at line 17 has been amended as follows:

Figure 6 is ~~an end~~ a second end view of the multi-bit driver shown in Figure 4.

The paragraph on page 8 beginning at line 12 has been amended as follows:

Figure 17 is a partial exploded perspective schematic view of ~~the presently preferred~~ an alternate embodiment of the multi-bit driver.

The paragraph on page 8 beginning at line 14 has been amended as follows:

Figure 18 is a perspective schematic view of the presently preferred embodiment of the bit cartridge of Figure 17.

The paragraph on page 8 beginning at line 20 has been amended as follows:

Figure 21 is a partial cut away view of the presently preferred embodiment multi-bit driver showing the relationship of the bit assemblies and the barrel of Figure 17.

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The paragraph on page 9 beginning at line 2 has been amended as follows:

Figure 22 is a top plan view of the presently preferred embodiment of the multi-bit driver of Figure 17.

Detailed Description of the Preferred Embodiment

Assembly

The paragraph on page 12 beginning at line 17 has been amended as follows:

As best shown in Figure 11 once bit assemblies 100 have been assembled, they are loaded into barrel 32 as shown in Figure 11. Bit assemblies 100 are urged through cap end 60 of barrel 32 and are longitudinally aligned with an actuator channel 70 in barrel 32. In this manner, bit assemblies 100 are nested ~~etui~~ equi distant around the interior circumference of barrel 32 and in this case 6 bit assemblies are shown to be inserted into barrel 32. Note that preferably each bit assembly 100 has a slight angular bend namely angle theta 108 as shown in Figure 13. At connector 56 where tool bit 52 is connected with bit extension 54, the angle theta is approximately 20° which has been found to work best in practise. Angle theta 108 can range from 1° to 45°, however, the preferred angle is 20°. Angle theta 108 is incorporated into bit assembly 100 in order to keep head end 112 of bit assemblies 100 proximate the inner diameter of barrel 32 and to prevent tool bit 52 from impinging on one another while loaded in barrel 32. Angle theta 108 is also required to ensure tool bit 52 is aligned longitudinally with receiving channel 89 when it ~~enter~~ enters bit chuck 80. From Figures 3 and 11 you will see that assemblies 100 are installed into barrel 32 such that the head end 112 of tool bits 52 are projecting outwardly toward to the interior diameter of barrel 32.

The paragraph on page 14 beginning at line 4 has been amended as follows:

Once bit assemblies 100 are in place, and fastened into ~~placed place~~ with knob fastener 74, bit guide 41 can now be inserted through cap end 60 of barrel 32. Guide 40 is connected to guide support 42 in such a manner so as to allow guide 40 to rotate independently of guide support 42 while threading end cap 38 into threads 62 at cap end 60.

The paragraph on page 14 beginning at line 9 has been amended as follows:

With guide 40 in place, the bit extension 54 of bit assemblies 100 are in ~~slide-able~~ slideable engagement with guide faces 43 of guide 40 as they are urged along actuator channel 70.

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Guide 40 serves to maintain bit extension 54 in their proper position longitudinally aligned with actuator 70 and also ensures to keep bit assemblies 100 nested outwardly adjacent the inner diameter of barrel 32.

The paragraph on page 16 beginning at line 11 has been amended as follows:

In order for tool bit 52 to slidably and easily pass through receiving channel 89, collar 36 is eased off and/or threadably moved forward along bit chuck 80, such that tapered service surface 84 does not contact steel ball 82 and is free to move upwardly within countersink 81.

In the Abstract

The paragraph on the Abstract page has been amended as follows:

~~The present invention~~ A multi-bit driver comprises a longitudinally oriented housing including a bit chuck at one end; a plurality of tool bits nested within said housing in a retracted position; and bit assemblies including tool bits and being operable to extend said tool bit from said retracted position to said extended position by a single longitudinal motion for selectively extending tool bits to an extended position and retracting said tool bits to said retracted position, such that in the extended position, said tool bits project from said bit chuck and are substantially longitudinally aligned with said housing.

In The Claims

Kindly delete all the previously submitted claims.

Kindly insert the following claims:

--18. A multi-bit driver comprising:

- (a) a longitudinally oriented housing including a bit chuck having an hexagonal receiving channel at one end;
- (b) a plurality of hexagonal tool bits nested within said housing in a retracted position;
- (c) an actuating means for selectively extending said tool bits to an extended position and retracting said tool bits to said retracted position, such that in the

- extended position, said tool bits project from said hexagonal receiving channel of said bit chuck and are substantially longitudinally aligned with said housing;
- (d) wherein said actuating means further includes at least one bit assembly including at least one bit extension operably connected at one end to each of said tool bits and at the other end to a fastening means for operatively urging said tool bits between said extended and retracted position and for maintaining alignment of said tool bits with said bit chuck;
- (e) said fastening means for slidably connecting said bit extension to actuator channels defined in said housing such that said bit extension is guided slidably along said actuator channel;
- (f) wherein said bit extension being flexible in the radial direction and stiffer in the transverse or lateral direction for guiding said tool bit into said bit chuck by allowing said tool bit to deflect radially up or down but resistive to deflection transversely side to side such that said tool bit remains aligned longitudinally and operative for ensuring positive registration with said bit chuck as said tool bit is urged into said extended position.

19. The multi-bit driver claimed in claim 18, wherein said bit extension having a planar profile with a width greater than the thickness.
20. The multi-bit driver claimed in claim 18, wherein said bit extension having a thickness to width ratio of at least 1:1.5.
21. The multi-bit driver claimed in claim 18, wherein said bit extension constructed of a flexible resilient material such that it is flexible in the radial direction and stiffer in the transverse or lateral direction.
22. The multi-bit driver claimed in claim 18, wherein said actuating means operates to extend said tool bit by longitudinal motion in one direction and retract said tool bit by longitudinal motion in the opposite direction, wherein said longitudinal motion is effected using a single finger or thumb pressure.
23. The multi-bit driver claimed in claim 18, wherein said fastening means comprises an actuator knob partially projecting externally of said housing for the application of finger pressure thereto, said actuator knob also for connecting a fastener end of said bit assembly to said actuator knob for operatively urging said bit assembly slidably along said actuator channel.

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24. The multi-bit driver claimed in claim 18, wherein said housing including a cone proximate said bit chuck having an interior guide surface for slidably guiding tool bits into alignment with said bit chuck as tool bits are urged into said extended position.
25. The multi-bit driver claimed in claim 18, further including a guide means for maintaining said bit assemblies separate and nested proximate the inner surface of said housing, and for guiding said bit assemblies as they are urged between the extended and retracted position.
26. The multi-bit driver claimed in claim 25 wherein said guide means includes permanent magnets mounted in said housing for magnetically attracting said tool bits and for maintaining said bit assemblies separate and nested proximate the inner surface of said housing, and for guiding said bit assemblies as they are urged between the extended and retracted position.
27. The multi-bit driver claimed in claim 18, further including a locking means for locking said tool bit in said extended position.
28. The multi-bit driver claimed in claim 24, wherein said cone portion being disposed between said retracted tool bits and said bit chuck for guiding tool bits into alignment with said bit chuck as tool bits are urged into said extended position.
29. The multi-bit driver claimed in claim 24, wherein said cone being integrally part of said housing and including a conically shaped interior guide surface tapering inwardly towards said bit chuck for guiding tool bits into alignment with said bit chuck as tool bits are urged into said extended position.
30. The multi-bit driver claimed in claim 26, wherein said guide means including a guide including guide faces for slideably receiving said bit assemblies, thereby maintaining said bit assemblies spaced apart within said housing.
31. The multi-bit driver claimed in claim 25, wherein said guide connected to said housing with a guide support which is connected at one end to said guide and at the other end to an end cap.
32. A multi-bit driver comprising:
 - (a) a longitudinally aligned generally cylindrical housing;
 - (b) a plurality of bit assemblies each including a tool bit, said bit assemblies incorporated in said housing;
 - (c) said housing including a means for releasably holding said tool bits at one end

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- of said housing; and
- (d) an actuating means for selectively extending tool bits to an extended position and retracting said tool bits to said retracted position, such that in the extended position, said tool bits project from said holding means wherein said bit assemblies are operably slideably attached to said housing.
- (e) wherein each bit assembly includes a bit extension connected at one end to each tool bit and at the other end operably slideably connected to said housing said bit assembly adapted such that the tool bit can be easily deflected radially and resistive to lateral deflection to operably align said tool bits with said holding means as said tool bit urged into said extended position.
33. The multi-bit driver claimed in claim 32, wherein the housing includes a cone disposed between said retracted tool bits and said holding means for guiding and deflecting tool bits into alignment with said holding means as tool bits are urged into said extended position.
34. The multi-bit driver claimed in claim 32, wherein said actuating means being operable to slideably extend said tool bits from said retracted position to said extended position by a single longitudinal motion of said actuating means.
35. The multi-bit driver claimed in claim 32 wherein said actuating means connected to said tool bits being operable to retract said tool bits from said extended position to said retracted position by a single longitudinal motion of said actuating means.
36. The multi-bit driver claimed in claim 32, wherein said actuating means operates to extend said tool bit by longitudinal motion in one direction and retract said tool bit by longitudinal motion in the opposite direction.
37. The multi-bit driver claimed in claim 32, wherein said bit extension is connected at one end to said tool bit and at the other end slideably to an actuator channel defined in said housing, wherein said actuator channel for slidably guiding one end of said bit assemblies along said actuator channel during extension and retraction of said bit assemblies.
38. The multi-bit driver claimed in claim 37, wherein said bit extension including an actuator knob partially projecting externally of said housing for the application of finger pressure thereto, said knob being operably connected to a fastener end of said bit assembly and slideably attached to said actuator channel, such that operatively being said knob slideably along said actuator channel operatively longitudinally urges

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said tool bits.--

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